Docket No.: 2185-0480P
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Satoru NIPPA

Application No.: 09/708,519 Confirmation No.: 1737

Filed: November 9, 2000 Art Unit: 1796

For: RESIN COMPOSITE AND METHOD FOR PRODUCING THE SAME Examiner: S. L. McClendon

APPEAL BRIEF ON BEHALF OF APPELLANT UNDER 37 C.F.R. § 41.37

MS Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

INTRODUCTORY COMMENTS

As required under § 41.37(a), this brief is filed within two months of the Notice of Appeal filed in this case on December 27, 2007, and is in furtherance of said Notice of Appeal.

This brief contains items under the following headings as required by 37 C.F.R. § 41.37 and M.P.E.P. § 1205.2:

I.	Real Party in Interest
II	Related Appeals and Interferences
III.	Status of Claims
IV.	Status of Amendments
V.	Summary of Claimed Subject Matter
VI.	Grounds of Rejection to be Reviewed on Appeal
VII.	Argument
VIII.	Claims
Appendix A	Claims
Appendix B	Evidence
Appendix C	Related Proceedings

I. REAL PARTY IN INTEREST

As evidenced by the Assignment filed on February 15, 2001, and recorded at Reel 011532, Frame 0245, the Real Party in Interest in the present application is the assignee of record, Sumitomo Chemical Company, Limited, of Osaka, Japan.

II. RELATED APPEALS AND INTERFERENCES

There are no other appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

III. STATUS OF CLAIMS

Claims 1-4 are currently pending in the present application. Claims 3 and 4 have been withdrawn from consideration by the Examiner. Claims 1 and 2 stand rejected. Claims 1 and 2 are appealed. The present claims stand or fall together.

IV. STATUS OF AMENDMENTS

Applicant filed an Amendment After Final Rejection on November 27, 2007. The Examiner responded to the Amendment After Final Rejection in an Advisory Action mailed December 11, 2007. In the Advisory Action, the Examiner indicated that Applicants' proposed amendments to claim 1 would not be entered.

Accordingly, the claims enclosed herein as Appendix A do not incorporate the amendment to claim 1 as indicated in the paper filed.

V. SUMMARY OF CLAIMED SUBJECT MATTER

One independent claim is presently appealed.

Independent claim 1 relates to a resin composite comprising a resin and aluminum hydroxide having an average primary-particle diameter of about 50 nm or smaller, wherein said composite has an index Y/X of 0.1 or less provided that the value X is an average value of intensities of aluminum characteristic X-ray measured by scanning a beam on a straight line on the composite with an electron-probe X-ray microanalyzer and the value Y is a standard deviation of the intensities. See the specification at page 2, lines 9-17.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

There is one ground of rejection to be reviewed on appeal, which is:

(1) Whether, under 35 U.S.C. § 102(b), claims 1 and 2 are anticipated by USP 4,491,553 to Yamada et al. (hereinafter "Yamada").

VII. ARGUMENT

Appellant respectfully submits that claims 1 and 2 subject to this appeal have been improperly rejected under 35 U.S.C. § 102(b). As will be seen below, the appealed claims stand or fall together.

The Present Invention and its Advantages

The present invention provides a resin composite comprising a resin and aluminum hydroxide having an average primary-particle diameter of about 50 nm or smaller, wherein said composite has an index Y/X of 0.1 or less provided that the value X is an average value of intensities of aluminum characteristic X-ray measured by scanning a beam on a straight line on the composite with an electron-probe X-ray microanalyzer and the value Y is a standard deviation of the intensities.

In the present invention, an average primary-particle diameter of aluminum hydroxide of about 50 nm or smaller is one of the requirements, an index Y/X of 0.1 or less is another. A resin composite having excellent tensile strength is provided by satisfying these requirements (see Example 1, average primary-particle diameter: 5nm, index Y/X: 0.038, tensile strength 6.8Mpa; Comparative Example 1, average primary-particle diameter: 13nm, index Y/X: 0.116, tensile strength: 4.1Mpa).

(1) Claims 1 and 2 are not anticipated by Yamada

Appellant respectfully submits that claims 1 and 2 are not anticipated by Yamada as cited by the Examiner. As such, the Board is respectfully requested to reverse the rejection discussed under section (VI) above.

Claim 1 is directed to a resin composite comprising a resin and aluminum hydroxide having an average primary-particle diameter of about 50 nm or smaller, wherein said composite has an index Y/X of 0.1 or less provided that the value X is an average value of intensities of aluminum characteristic X-ray measured by scanning a beam on a straight line on the composite with an electron-probe X-ray microanalyzer and the value Y is a standard deviation of the intensities.

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). "When a claim covers several structures or compositions, either generically or as alternatives, the claim is deemed anticipated if any of the structures or compositions within the scope of the claim is known in the prior art." *Brown v. 3M*, 265 F.3d 1349, 1351, 60 USPQ2d 1375, 1376 (Fed. Cir. 2001) "The identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). The elements must be arranged as required by the claim, but this is not an *ipsissimis verbis* test, i.e., identity of terminology is not required. *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990).

(i) Yamada fails to expressly teach each and every element of the claimed invention.

Yamada fails to disclose or suggest a composite comprising a resin and an aluminum hydroxide having an average primary-particle diameter in nanometer size (specifically, of about 50 nm or smaller) in which the aluminum hydroxide is well dispersed in the resin to the degree

that the composite has index Y/X of 0.1 or less, which is instantly claimed in the present application.

Yamada discloses a method for producing a filler-loaded thermoplastic resin composite (see, col. 3, lines 13-15 of Yamada). The filler in the composite includes aluminum hydroxide (see, col. 4, lines 32-38 of Yamada). The filler usually has an average particle diameter of from 0.01 to 50 μm (i.e., 10-50,000 nm) (see, col. 4, lines 40-43 of Yamada). There is no other disclosure concerning particle diameter of the filler except that the average particle diameter of the filler used in the Examples are from 4 μm (i.e., 4,000 nm; in Examples 1 and 6) to 8 μm (i.e., 8,000 nm; in Example 2).

As described at col. 1, lines 33-41 in Yamada, it is known that, when a thermoplastic resin and a filler are introduced into a molding machine as a mere blend of both in particle or powder forms, unavoidable segregation of the components takes place leading to an uneven distribution of the components (see, col. 1, lines 33-38 of Yamada). According to Yamada, the primary object of the invention of Yamada is to provide a novel and improved method for producing a filler-loaded thermoplastic resin composite, in which scattering of the filler is reduced to a great extent with consequent acceleration of the mixing (see, col. 3, lines 13-17 of Yamada). In the method, a fibril-forming, i.e., fibrillatable PTFE (polytetrafluoroethylene), is mixed with the thermoplastic resin and the filler (see, col. 4, lines 51-53 of Yamada). There is no disclosure or suggestion that the uniform composite would be obtained without using a fibril-forming polytetrafluoroethylene.

On the other hand, as recited in claim 1, the claimed resin composite comprises a resin and an aluminum hydroxide having an average primary-particle diameter of about 50 nm or

smaller. In the resin composite in the present invention, an aluminum hydroxide is well dispersed to the degree that the resin composite has an index Y/X of 0.1 or less, even if the average primary-particle diameter of the aluminum hydroxide is very small, specifically about 50 nm or smaller, without using a fibril-forming agent such as polytetrafluoroethylene.

Since Yamada does not expressly teach each and every element as set forth in the claims, Yamada cannot constitute a proper anticipatory reference, within the meaning of 35 U.S.C. § 102(b), unless Yamada inherently discloses each and every limitation of the claimed invention.

(ii) Yamada fails to inherently disclose the claimed invention.

A resin composite of the present invention cannot be obtained by the method disclosed in Yamada, as alleged by the Examiner in the Office Action dated February 4, 2002, at paragraph 10. Therefore, Yamada does not inherently teach the presently claimed invention.

The Examiner has maintained that:

> "although there is no explicit disclosure in Yamada et al. that the composite has index Y/X of 0.1 or less as presently claimed, given that Yamada et al. disclose that the dispersion of the filler in the resin is very uniform (col. 6, lines 19-21) . . . it is clear that the composite of Yamada et al., which possess high degree of dispersion, i.e. filler is very uniformly dispersed, would inherently possess index Y/X of 0.1 or less as presently claimed."

Yamada discloses a method for producing a filler-loaded thermoplastic resin composite. The filler in the composite includes aluminum hydroxide (see, col. 4, lines 32-38 of Yamada). The filler usually has an average particle diameter of from 10-50,000nm (see, col. 4, lines 40-43). In the method of Yamada, a fibril-forming, i.e. fibrillatable PTFE, is mixed with the thermoplastic resin and the filler (see col. 4, lines 51-53).

In Yamada, it is described as follows:

"The advantages obtained with the invention are that the mixing is very smooth, the scattering of the filler is very little, the mixing time is short, the filler-loaded thermoplastic resin composite is very uniform in the dispersion of the filler and the pressure of the resin composite at flange is very stable" (see col. 6, lines 17-22).

Yamada discloses that the resin composite prepared by mixing 90-60 parts of resin (such as polypropylene), 10-40 parts of filler (such as Talc) having an average particle diameter of about 8μm and 0 or 0.5 parts of fibrillatable PTFE, and evaluations of filler dispersion in all resin composites give the same results, i.e. "good" (see Table 2, Experiment No. 10-15). The dispersion evaluation was conducted visually (see col. 9, lines 7-8 of Yamada).

According to above mentioned disclosure, Yamada clearly teach that the degree of filler dispersion in a filler-loaded resin composition with fibrillatable PTFE is the same as that without fibrillatable PTFE, and the addition of fibrillatable PTFE does not necessarily improve filler dispersion in a filler-loaded resin composite.

On the other hand, a resin composite of the present invention can be provided, for example, by a method comprising the steps of mixing an aqueous resin emulsion containing a resin with aluminum hydroxide having an average primary-particle diameter of 50nm or smaller, letting the resin and the aluminum hydroxide therein aggregate to obtain a slurry containing the resin composite and separating the composite from the slurry (see page 6, lines 11-18, and page 7, lines 19-23 of the present specification).

A resin composite of the present invention, as shown in Comparative Example 1, can hardly be provided by the method of Yamada (the method of mixing a resin in particulate form such as powders, granules, beads, pellets, with filler and fibrillatable PTFE).

Therefore, a filler-loaded resin composition including fibrillatable PTFE disclosed by Yamada is considered to have an index more than 0.1. This is clearly outside the scope of the presently claimed invention.

The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. *In re Rijckaert*, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993) (reversed rejection because inherency was based on what would result due to optimization of conditions, not what was necessarily present in the prior art); *In re Oelrich*, 666 F.2d 578, 581-82, 212 USPQ 323, 326 (CCPA 1981). "To establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.' " *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999) (citations omitted).

"When the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not." *In re Spada,* 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). Therefore, the *prima facie* case can be rebutted by evidence showing that the prior art products do not necessarily possess the characteristics of the claimed product. *In re Best,* 562 F.2d at 1255, 195 USPQ at 433. "[T]he question whether a claim limitation is inherent in a prior art reference is a factual issue on which evidence may be introduced." *See Continental Can Co. USA v. Monsanto Co.*, 948 F.2d 1264, 1268, 20 USPQ2d 1746, 1749 (Fed. Cir. 1991).

In order to demonstrate that Yamada does not necessarily possess the characteristics of the claimed product, Appellant prepared several resin composites, corresponding to Yamada's method. The evidence, taken together, establishes that each of the resin composites prepared according to Yamada had an index of more than 0.1, which is clearly outside of the scope of the claimed invention. *See* the **Declaration Submitted Under 37 C.F.R. § 1.132 of Mr. Satoru Nippa**; the **First Declaration Submitted Under 37 C.F.R. § 1.132 of Mr. Kazuki Takemura**; the **Second Declaration Submitted Under 37 C.F.R. § 1.132 of Mr. Kazuki Takemura**; and the **Declaration Submitted Under 37 C.F.R. § 1.132 of Mr. Yusuke Kawamura**. Each of the noted Declarations is submitted herewith for the Board's consideration as a part of Appendix B and will be discussed below.

Declaration Submitted Under 37 C.F.R. § 1.132 of Mr. Satoru Nippa

Appellant prepared a resin composite, in accordance Yamada's method, by the method of mixing with styrene-butadiene rubber, aluminum hydroxide having an average particle diameter of 13nm and fibrillatable PTFE, and evaluating the index of the obtained resin composite. The obtained resin composite had an index of more than 0.1. See the attached 37 C.F.R. § 1.132 Declaration of Mr. Satoru Nippa (hereinafter "the Nippa Declaration"). The resin composite of the present invention is clearly different from the resin composite disclosed in Yamada in respect to an index Y/X.

In response to the Nippa Declaration, the Examiner took the position that it is not clear that the fibrillatable PTFE "F-104" is the same as "F-103" utilized in Yamada (see page 7, line 19-20 of the Office Action dated July 29, 2003).

However, Daikin Industries Co. Ltd., manufacturer of fibrillatable PTFE "F-103", explains that "F-103" has stopped being produced and is replaced by "F-104". Since "F-104" and "F-103" are powdery and fibrillatable PTFE, "F-104" can be used in place of "F-103". Thus, the method disclosed in the Nippa Declaration is not different from that of Yamada.

Therefore, the Nippa Declaration established that the resin blends of Example 2 of Yamada are outside of the range of the present invention.

First Declaration Submitted Under 37 C.F.R. § 1.132 of Mr. Kazuki Takemura

In response to Appellant's reply of April 15, 2003, and the Nippa Declaration, the Examiner asserted in the Advisory Action dated April 30, 2003, that Yamada discloses in one embodiment that the particulate resin and the filler (AlOOH), are mixed in the presence of fibrillatable PTFE whereby the resin and filler agglomerate (i.e., aggregate). Further, Yamada discloses (see col. 4) that in one embodiment the PTFE is used in the form of an aqueous emulsion. Additionally in other examples of Yamada (examples 3-5), kneading is not required (i.e., "non-kneaded").

Accordingly, the Examiner argued that the Nippa Declaration was *not* persuasive given that the declaration was only based on a preferred embodiment of Yamada.

However, as disclosed in Examples 3-5 of Yamada, even if an aluminum hydroxide is mixed with a resin and PTFE in the form of aqueous emulsion without kneading, a resin composite having an Y/X of 0.1 or less as claimed in the present invention is *not* obtained.

In order to evidence this fact, Appellant submitted a 37 C.F.R. § 1.132 Declaration, executed by Mr. Kazuki Takemura (hereinafter "the first Takemura Declaration").

As described in the first Takemura Declaration, a resin composite obtained by a method of mixing an aluminum hydroxide with a resin and PTFE emulsion without kneading, has an Y/X index outside the scope of the present claim (see the following Table 1).

Table 1

	Y/X index	**Addition of PTFE emulsion:**	**Condition under mixing an aluminum hydroxide with a resin:**
Experiment 1 *(First Takemura Declaration)*	0.197	9 parts* by weight based on the total amount of an aluminum hydroxide and a resin	Non-kneading
Experiment 1 *(Nippa Declaration)*	0.11	0.3 parts by weight based on the total amount of an aluminum hydroxide and a resin	Kneading
Experiment 1 *(Nippa Declaration)*	0.12	None	Kneading
Example 1 *(Original)*	0.038	None	Non-kneading

* Since a PTFE content in the emulsion is 60%, an amount of PTFE is about 5 parts by weight based on total amount of an aluminum hydroxide and a resin.

Further, the Examiner alleged that "When the fibrillatable PTFE is used in larger amounts wherein the emulsion contains larger amounts of water, it would appear that Yamada et al. do disclose resin composite which would inherently possess Y/X index as presently claimed" (see page 3, lines 16-18 of the Office Action dated May 4, 2004).

However, as apparent from the above results, even if the fibrillatable PTFE is used in the large amount, Y/X index does *not* satisfy the range of the present claims.

Second Declaration Submitted Under 37 C.F.R. § 1.132 of Mr. Kazuki Takemura

Still unconvinced by the previous evidence in support of the patentability of the present invention, the Examiner stated as follows at page 2, line 16 to page 3, line 16 of the Office Action dated March 24, 2006:

> *Previously, the examiner argued that the declaration filed 4/4/05 was not persuasive given that it is not clear what method is used to form the resin composite or why the method appears to be different than that of Yamada et al. The examiner stated that it was not clear why in the declaration the aluminum hydroxide and resin emulsion are first dried and then added to SBR and that it was not clear what, if any, effect drying the aluminum hydroxide/PTFE emulsion mixture would have on the Y/X value of the produced resin composite.*
>
> *In response, applicant argues that the aluminum hydroxide and resin emulsion were first dried and then added to SBR in light of the disclosure in col. 6, lines 36-40 of Yamada et al. that teach that it is necessary to decrease the moisture content of materials as far as possible in order to obtain shaped articles of good quality.*
>
> *However, while col. 6, lines 36-40 of Yamada et al. disclose that in order to obtain shaped articles of good quality, it is advantageous to decrease the moisture content as far as possible, this portion of Yamada et al. (col. 6, lines 47-53) further discloses that the mixture operation itself decreases the moisture content and therefore a pre-drying or pre-heating step is not necessary. Thus, it appears that Yamada et al. teach against using a drying step.*
>
> *Thus, the examiner's position remains that the declaration is not percussive (sic.) given that the declaration does not provided (sic.) comparison with the "closest" prior art Yamada et al. given that the method of forming the resin composite in the declaration is different than that of Yamada et al.*

As such, it appears that the Examiner discounted the first Takemura Declaration, as not being persuasive, because in the first Takemura Declaration, aluminum hydroxide and resin emulsion are first dried, which is different from the method of Yamada.

Accordingly, in the attached 37 CFR § 1.132 Declaration of Mr. Takemura (hereinafter "the second Takemura Declaration"), the "Experiment 1" set forth therein does not utilize such a

first drying step of the aluminum hydroxide and resin emulsion (as utilized in the first Takemura Declaration). In particular, in the second Takemura Declaration, Experiment 1 is set forth as follows:

> ***Experiment 1***
>
> *13 parts of aluminum hydroxide powder having a crystalline structure of boehmite and an average primary-particle diameter of 13 nm, which was obtained by hydrolysis of aluminum alkoxide, was mixed with 9 parts of PTFE emulsion (trade name: PTFE 30J, PTFE content: 60%, manufactured by Dupont-Mitsui Fluorochemicals Co., Ltd.) in a vessel for 10 minutes to obtain a mixture.*
>
> *The mixture was mixed for 4 minutes at 100 °C with 87 parts of styrene-butadiene rubber (trade name: HS-1, manufactured by Sumitomo Chemical Co., Ltd.), 1.3 parts of zinc oxide, 1.3 parts of stearic acid, 0.95 parts of an age resistor (trade name: ANTIGENE 3C, manufactured by Sumitomo Chemical Co., Ltd.), and 0.95 parts of wax (trade name: SUNNOC-N, manufactured by Ouchi-Shinko Chemical Industrial Co., Ltd.), and then mixed for 3.5 minutes at 50 °C with 0.64 parts of a vulcanization accelerator (trade name: SOXINOL CZ, manufactured by Sumitomo Chemical Co., Ltd.), 0.64 parts of a vulcanization accelerator (trade name: SOXINOL D, manufactured by Sumitomo Chemical Co., Ltd.), and 0.89 parts of sulfur.*
>
> *The resultant was subjected to vulcanization molding for 20 minutes by using a 160 °C hot press to obtain a resin composite.*
>
> *Using the thus obtained resin composite, an index Y/X of the same resin composite was measured in accordance with the procedure set forth in the present specification at page 15, lines 17-25.*

As also stated in the second Takemura Declaration:

> ***The resin composite of the above Experiment 1 possessed an index Y/X of 0.135. It is thus recognized that the resin composite prepared in the above Experiment 1 does not have an index Y/X of 0.1 or less.***

Declaration Submitted Under 37 C.F.R. § 1.132 of Mr. Yusuke Kawamura

In the Office Action dated December 13, 2006, the Examiner took the position that the second Takemura Declaration was insufficient to overcome the outstanding rejection. In reply to the Examiner's comments, Appellant submitted a 37 CFR § 1.132 Declaration of Mr. Yusuke Kawamura (hereinafter "the Kawamura Declaration"), wherein Appellant specifically addressed the Examiner's concerns:

- As to the Examiner's point of mixing procedure, filler, resin and PTFE emulsion are mixed all together at once in the Experiment 2 of Mr. Kawamura's enclosed declaration.
- As to the Examiner's point of PTFE content in the used PTFE emulsion, the Experiment 2 utilizes PTFE emulsion having PTFE content of 32%. (In Experiment 2 of the Kawamura's Declaration, the 64% PTFE emulsion was utilized with being diluted double in advance with water.)
- As to the Examiner's point of composition, the composite of Mr. Kawamura's Experiment 2 contains 20 parts of aluminum hydroxide and 80 parts of resin, which is commensurate in scope with the scope of Yamada et al.
- As to the Examiner's point of mixing procedure of additives and molding temperature, Mr. Kawamura's Experiment 2 accords with Yamada et al.
- As to the Examiner's point of significance of the results, Mr. Kawamura's enclosed declaration shows the tensile strength of the Experiment 2, which was 4.1 MPa, and was much lower than 6.8 MPa of Example 1 of the present specification.

Accordingly, Appellant respectfully submits that the outstanding rejection is sufficiently rebutted by evidence showing that the prior art product does not necessarily possess the characteristics of the claimed product.

VIII. CONCLUSION

Appellant has repeatedly demonstrated that the Examiner has failed to successfully allege that the rejected claims are anticipated, within the meaning of 35 U.S.C. § 102(b). The Yamada reference does not, expressly or inherently, teach each and every limitation of the claimed invention. Appellant has sufficiently met the burden of demonstrating that Yamada is outside of the scope of the presently claimed invention by submitting four declarations exemplifying the full scope of the Yamada disclosure. The submitted declarations, clearly establish patentable distinctions between the present invention and that of Yamada. For, at least, the reasons advanced above, it is respectfully submitted that all claims in this application are allowable. Thus, favorable reconsideration and reversal of the Examiner's rejections under 35 U.S.C. §102(b), by the Honorable Board of Patent Appeals and Interferences, are respectfully solicited.

The required Appeal Brief fee in the amount of $500.00 is attached hereto.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Dated: **February 27, 2008**

Respectfully submitted,

By _____
John W. Bailey
Registration No.: 32,881
BIRCH, STEWART, KOLASCH & BIRCH, LLP
8110 Gatehouse Road
Suite 100 East
P.O. Box 747
Falls Church, Virginia 22040-0747
(703) 205-8000
Attorney for Applicant

Appendices: Appendix A – Claims Appendix
Appendix B – Evidence Appendix
Appendix C – Related Proceedings Appendix

APPENDIX A

1. (Previously Presented) A resin composite comprising a resin and aluminum hydroxide having an average primary-particle diameter of about 50 nm or smaller, wherein said composite has an index Y/X of 0.1 or less provided that the value X is an average value of intensities of aluminum characteristic X-ray measured by scanning a beam on a straight line on the composite with an electron-probe X-ray microanalyzer and the value Y is a standard deviation of the intensities.

2. (Previously Presented) The resin composite according to claim 1 wherein the resin is a synthetic resin selected from the group consisting of vinyl acetate resin, acrylic resin, silicon resin, polybutene resin, copolymer resins of vinyl acetate and ethylene, styrene, acrylic acid or vinyl chloride, polystyrene, styrene-butadiene rubber, butadiene rubber, chloroprene rubber and isoprene rubber.

3. (Withdrawn) A method for producing the resin composite of claim 1, said method comprising the steps of mixing an aqueous resin emulsion containing a resin with aluminum hydroxide having an average primary-particle diameter of 50 nm or smaller, letting the resin and the aluminum hydroxide therein aggregate to obtain a slurry containing the resin composite and separating the composite from the slurry.

4. (Withdrawn) The process according to claim 3 wherein the aqueous resin emulsion is an emulsion which is prepared by dispersing and emulsifying a synthetic resin selected from the group consisting of vinyl acetate resin, acrylic resin, silicon resin, polybutene resin, copolymer resins of vinyl acetate and ethylene, styrene, acrylic acid or vinyl chloride, polystyrene, styrene-butadiene rubber, butadiene rubber, chloroprene rubber and isoprene rubber, in water.

APPENDIX B

A copy of evidence pursuant to § 1.132 that is relevant to this appeal is attached hereto.

Declaration Submitted Under 37 C.F.R. § 1.132 of Mr. Satoru Nippa: Entered in the record by the Examiner on April 30, 2003.

Declaration Submitted Under 37 C.F.R. § 1.132 of Mr. Kazuki Takemura: Entered in the record by the Examiner on June 27, 2005.

Declaration Submitted Under 37 C.F.R. § 1.132 of Mr. Kazuki Takemura: Entered in the record by the Examiner on December 13, 2006.

Declaration Submitted Under 37 C.F.R. § 1.132 of Mr. Yusuke Kawamura: Entered in the record by the Examiner on August 27, 2007.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:

Satoru NIPPA

Serial No. : 09/708,519 Group Art Unit: 1714

Filed: November 9, 2000 Examiner: Callie E.Shosho

For: RESIN COMPOSITE AND METHOD FOR PRODUCING THE SAME

DECLARATION OF SATORU NIPPA UNDER 37 C.F.R.1.132

Honorable Commissioner of Patents and Trademarks
Washington, D.C. 20231

I, Satoru NIPPA, residing at 13-244, kitashin-machi, Niihama-shi, Ehime-ken, Japan, hereby declare and say as follows:

1) I am an inventor of the above-identified application;

2) I finished a Master Course in the Graduate School of Engineering in Osaka University and received a master's degree from the Department of Applied Chemistry thereof in March 1990;

3) Since April 1990 to the present, I have been employed by Sumitomo Chemical Co., Ltd., assignee of the above-identified application, and engaged in research and development in the field of inorganic chemistry; and

4) I read the Office Action issued on October 15, 2002 in the above-identified application, and the art references cited therein. Then, I carried out experiments

to examine whether or not, resin composites disclosed in USP 4,491,553 are similar to that of the above-identified application. I beg to report the results of the experiments below.

EXPERIMENTS

Experiment 1

A resin composite was prepared by mixing in a kneader (trade name: Labo Plastomill model 20-200C, blade: B-75, manufactured by Toyo Seiki Seisakusyo Co., Ltd.) with 41g (87 parts) of styrene-butadiene rubber (trade name: HS-1, manufactured by Sumitomo Chemical Co.,Ltd.), 6 g(13 parts) of aluminum hydroxide powder (crystalline structure: boehmite, average primary-particle diameter: 13nm) obtained by hydrolysis of aluminum alkoxide followed by drying and 0.15g(0.3 parts) of fibrillatable PTFE (trade name: F-104, manufactured by Daikin Industries, LTD), and shaping by compression molding in a press of 9.8MPa at 170°C.

Using obtained resin composite, an index Y/X (in page 15 lines 17-25 of this specification) and filler dispersion (in page 5 col.9 lines 7-9 of USP 4,491,553) were measured. The results are shown in Table below.

Experiment 2

The same processes as in Experiment 1 were carried out except that, fibrillatable PTFE was not added. Using obtained resin composite, above-mentioned properties of obtained resin composite

was measured. The results are shown in Table below.

Table

	Experiment 1	Experiment 2
Index Y/X	0.11	0.12
Filler dispersion	good	good

It was recognized that, both of the resin composites utilized in Experiment 1 and 2 are good in filler dispersion.

Neither of the resin composites has an index Y/X of 0.1 or less.

I, the undersigned, declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so that made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Satoru Nippa

Satoru NIPPA

Dated this 7th day of April, 2003

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of Satoru NIPPA
Serial No. : 09/708,519 Group Art Unit: 1714
Filed: November 9, 2000 Examiner: Callie E.Shosho
For: RESIN COMPOSITE AND METHOD FOR PRODUCING THE SAME

DECLARATION UNDER 37 C.F.R.1.132

Honorable Commissioner of Patents and Trademarks
Washington, D.C. 20231

Sir:

I, Kazuki TAKEMURA, a Japanese citizen residing at 7-14, Hoshigoe-cho, Niihama-shi, Ehime, Japan, declare:

That I received a Master Degree from the Graduate School of Osaka University, Department of Engineering in March 1993, and entered Sumitomo Chemical Company Limited in April, 1993, in which company I have since then been engaged in research for technology of inorganic material;

That I am familiar with the prosecution history of the above-identified application;

That the following experiment was conducted by me or under my direction.

Object of the Experiment

The object of the present experiment is to show that a non-kneaded resin composite obtained by a process of mixing an aluminum hydroxide with PTFE emulsion, which is reckoned as being disclosed by Yamada '553, is different from the resin composite having an Y/X of 0.1 or less as claimed in the present application.

Experiment 1

6 g(13 parts) of aluminum hydroxide powder having crystalline structure of boehmite and average primary particle diameter of 13nm, obtained by hydrolysis of aluminum alkoxide was mixed with 4.2g(9 parts) of PTFE emulsion (trade name: PTFE 30J, PTFE content: 60 %, manufactured by Dupont-Mitsui Fluorochemicals Co., Ltd) in a vessel for 10 minutes, and then dried at 100℃ to obtain a mixture.

The mixture was mixed for 4 minutes at 100 ℃ with 41g (87 parts) of styrene-butadiene rubber (trade name: HS-1, manufactured by Sumitomo Chemical Co.,Ltd.), 0.6 g of zinc oxide, 0.6 g of stearic acid, 0.45 g of an age resistor (trade name: Antigene 3C, manufactured by Sumitomo Chemical Co., Ltd.), and 0.45 g of wax (trade name: SUNNOC-N, manufactured by Ouchi-Shinko Chemical Industrial Co., Ltd.), and then mixed for 3.5 minutes at 50 ℃ with 0.3 g of a vulcanization accelerator (trade name: Soxinol CZ, manufactured by Sumitomo Chemical Co., Ltd.), 0.3 g of a vulcanization accelerator (trade name: Soxinol D, manufactured by Sumitomo Chemical Co., Ltd.) and 0.42 g of sulfur.

The resultant was subjected to vulcanization molding for 20 minutes by using a 160°C hot press to obtain a resin composite.

Using the obtained resin composite, an index Y/X (in page 15 lines 17-25 of the present specification)was measured. The resin composite had an index of 0.197.

It was recognized that, the resin composite utilized in Experiment 1 does not have an index Y/X of 0.1 or less.

I declare further that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the above identified application or patent issued thereon.

Date: March 29, 2005

Kazuki Takemura
Kazuki TAKEMURA

PATENT
2185-0480P

IN THE U.S. PATENT AND TRADEMARK OFFICE

Applicant:	NIPPA, S.	Conf.: 1737	
Appl. No.:	09/708,519	Group: 1714	
Filed:	November 9, 2000	Examiner:	C. E. SHOSHO
For:	RESIN COMPOSITE AND METHOD FOR PRODUCING THE SAME		

37 CFR § 1.132 DECLARATION

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450
Sir:

I, Kazuki TAKEMURA, a Japanese citizen residing at 7-14, Hoshigoe-cho, Niihama-shi, Ehime, Japan, declare as follows:

That I received a Master Degree from the Graduate School of Osaka University, Department of Engineering in March 1993, and entered Sumitomo Chemical Company Limited in April, 1993, in which company I have since then been engaged in research in the technology field of inorganic materials;

That I am familiar with the prosecution history of the above-identified application;

That the following Experiment 1 was conducted by me, or that it was conducted under my direction and control.

37 CFR § 1.132 Declaration *Attorney Docket No. 2185-0480P*

Appl. No. 09/708,519

Experiment 1

13 parts of aluminum hydroxide powder having a crystalline structure of boehmite and an average primary-particle diameter of 13 nm, which was obtained by hydrolysis of aluminum alkoxide, was mixed with 9 parts of PTFE emulsion (trade name: PTFE 30J, PTFE content: 60%, manufactured by Dupont-Mitsui Fluorochemicals Co., Ltd.) in a vessel for 10 minutes to obtain a mixture.

The mixture was mixed for 4 minutes at 100 °C with 87 parts of styrene-butadiene rubber (trade name: HS-1, manufactured by Sumitomo Chemical Co., Ltd.), 1.3 parts of zinc oxide, 1.3 parts of stearic acid, 0.95 parts of an age resistor (trade name: ANTIGENE 3C, manufactured by Sumitomo Chemical Co., Ltd.), and 0.95 parts of wax (trade name: SUNNOC-N, manufactured by Ouchi-Shinko Chemical Industrial Co., Ltd.), and then mixed for 3.5 minutes at 50 °C with 0.64 parts of a vulcanization accelerator (trade name: SOXINOL CZ, manufactured by Sumitomo Chemical Co., Ltd.), 0.64 parts of a vulcanization accelerator (trade name: SOXINOL D, manufactured by Sumitomo Chemical Co., Ltd.), and 0.89 parts of sulfur.

The resultant was subjected to vulcanization molding for 20 minutes by using a 160 °C hot press to obtain a resin composite.

Using the thus obtained resin composite, an index Y/X of the same resin composite was measured in accordance with the procedure set forth in the present specification at page 15, lines 17-25.

37 CFR § 1.132 Declaration *Attorney Docket No. 2185-0480P*

Appl. No. 09/708,519

The resin composite of the above Experiment 1 possessed an index Y/X of 0.135. It is thus recognized that the resin composite prepared in the above Experiment 1 does not have an index Y/X of 0.1 or less.

The undersigned declarant declares further that all statements made herein of his own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Signed this 21st day of September 2006.

Kazuki Takemura

Kazuki Takemura

PATENT
2185-0480P

IN THE U.S. PATENT AND TRADEMARK OFFICE

Applicant:	NIPPA, S.	Conf.: 1737	
Appl. No.:	09/708,519	Group: 1714	
Filed:	November 9, 2000	Examiner:	C. E. SHOSHO
For:	RESIN COMPOSITE AND METHOD FOR PRODUCING THE SAME		

37 CFR § 1.132 DECLARATION

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450
Sir:

I, Yusuke KAWAMURA, a Japanese citizen residing at 2-2-225, Ikku-cho, Niihama-shi, Ehime, Japan, declare as follows:

That I received a Master Degree from the Graduate School of Osaka University, Department of Engineering Science in March 2004, and entered Sumitomo Chemical Company Limited in April, 2004, in which company I have since then been engaged in research in the technology field of inorganic materials;

That I am familiar with the prosecution history of the above-identified application;

That the following Experiment 2 was conducted by me, or that it was conducted under my direction and control.

Experiment 2

20 parts of aluminum hydroxide powder having a crystalline structure of boehmite and an average primary-particle diameter of 13 nm, which was obtained by hydrolysis of aluminum alkoxide, was mixed with 80 parts of styrene-butadiene rubber (trade name: HS-1, manufactured by Sumitomo Chemical Co., Ltd.) and 18 parts of PTFE emulsion, which was obtained in advance by mixing 9 parts of PTFE emulsion (trade name:POLYFLON D-1E, PTFE content: 64%, manufactured by Daikin Industries, Ltd.) and 9 parts of water, in a vessel for 5 minutes at 105 °C to obtain a mixture.

The mixture was mixed for 5 minutes at 50 °C with 1.3 parts of zinc oxide, 1.3 parts of stearic acid, 0.95 parts of an age resistor (trade name: ANTIGENE 3C, manufactured by Sumitomo Chemical Co., Ltd.), 0.95 parts of wax (trade name: SUNNOC-N, manufactured by Ouchi-Shinko Chemical Industrial Co., Ltd.), 0.64 parts of a vulcanization accelerator (trade name: SOXINOL CZ, manufactured by Sumitomo Chemical Co., Ltd.), 0.64 parts of a vulcanization accelerator (trade name: SOXINOL D, manufactured by Sumitomo Chemical Co., Ltd.), and 0.89 parts of sulfur.

The resultant was subjected to vulcanization molding for 20 minutes by using a 170 °C hot press to obtain a resin composite.

Using the thus obtained resin composite, an index Y/X of the same resin composite was measured in accordance with the procedure set forth in the present specification at page 15, lines 17-25.

The resin composite of the above Experiment 2 possessed an index Y/X of 0.138. It is thus recognized that the resin composite prepared in the above Experiment 2 does not

have an index Y/X of 0.1 or less. Moreover, the tensile strength of the resin composite was found to be 4.1MPa.

The undersigned declarant declares further that all statements made herein of his own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Signed this 1st day of June 2007.

Yusuke Kawamura

Yusuke Kawamura

APPENDIX C

None